

**FAIR BANDWIDTH ALLOCATION
BASED ON CONFIGURABLE SERVICE CLASSES**

ABSTRACT

A network device utilizes fair bandwidth allocation techniques based on configurable service classes. The network device comprises a scheduler that receives a packet associated with a service flow for delivery to a destination. The scheduler identifies a service credit associated with the service flow that represents a bandwidth allocation available for consumption by an associated service flow. Based on the identified service credit, the downstream scheduler assigns the packet to one of a plurality of hold queues. The number of hold queues may remain static during the allocation of bandwidth, which reduces the complexity of the scheduler and permits fair bandwidth allocation to occur. Such a queuing architecture also allows the downstream scheduler to achieve rate limiting and minimum bandwidth guarantee without using separate algorithms and/or architectures.